Arizona Interagency Radio System (AIRS) and National Interoperability Shared Channels Standard Operating Procedures

Effective Date: xx/xx/2009

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Record of Changes

Change No.	Date	Description	Signature

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Paul Wilson/Co-Chair, SIEC	Date
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Executive Summary

Purpose

This document contains standard operating procedures for the Arizona Interagency Radio System (AIRS). These procedures are intended to inform dispatcher and user actions regarding the system. AIRS is a suite of full-time, cross-banded mutual aid channels designed to provide interoperable communications capability to first responders of police, fire, and Emergency Medical Service agencies, as well as other personnel of municipal, county, state, tribal, federal agencies and approved non-governmental organizations (NGOs) performing public safety or public service activities.

These radio frequencies are to be used in the event of a multi-agency operation requiring the use of the common state radio channel(s), specifically for the use of coordinating activities during identified incidents. AIRS frequencies are not designed to be used by a single agency for routine public safety operations.

The document also details the National Interoperability Channels and makes recommendations regarding their use and programming.

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1 Introduction

1.1 Policy

This Standard Operating Procedure (SOP) defines how to use the statewide interoperability system known as the Arizona Interagency Radio System (AIRS).

1.2 Purpose

AIRS is a suite of full-time, cross-banded (i.e. VHF, UHF, and 800MHz[1]) mutual-aid channels designated specifically for multi-agency use across the State of Arizona. The AIRS suite is limited to one frequency pair per band for the entire state. See the county maps in Appendix A to identify areas where there is AIRS coverage.

Agencies wishing to operate on AIRS must sign a Memorandum of Understanding (MOU) with the Department of Public Safety (DPS) which holds the licenses for AIRS frequencies.

AIRS is designed to provide interoperable communications capability to first responders of police, fire, and EMS agencies, as well as other personnel of municipal, county, state, tribal, federal agencies and approved non-governmental organizations (NGOs) performing public safety or public service activities.

These radio frequencies are to be used in the event of a multi-agency, multi-discipline, and/or multi-jurisdictional operation requiring the use of the common state radio channel(s), specifically for the use of coordinating activities during identified incidents. AIRS frequencies are not to be used by a single agency for routine public safety operations. AIRS frequencies may, however, be used by a single agency to reconstitute communications in the event of a system failure or other significant communications loss.

1.3 Administration

The Arizona Statewide Interoperability Executive Committee (SIEC) provides AIRS oversight.

1.4 Document Terminology

The terms “shall,” "must,” “will,” and “required” are used throughout this document to indicate required parameters and to differentiate from recommended parameters. Recommendations are identified by the words “should,” “desirably” and “preferably.”

Updates & Revisions

The SIEC will review this SOP on an as needed basis. Agencies using and/or monitoring AIRS are responsible for checking the PSIC website at www.azgita.gov/psic/ to obtain the current release of the AIRS SOP. Agencies wishing to submit revisions or additions to this SOP should send their requests electronically to siec@azgita.gov or in writing to the PSIC Office,

[1] All 700 MHz radios can be programmed to access AIRS 800 MHz frequencies

Government Information Technology Agency located at 100 N 15th Avenue, Suite 440, Phoenix, AZ 85007. The PSIC Office will agendize the revisions for the SIEC.

2 AIRS Standards

2.1 Introduction

2.1.1 History

The Arizona Interagency Radio System (AIRS) is an outgrowth of Arizona's Inter-Agency Radio System (IARS) which was started in the mid 1970s. IARS was developed to allow communications between law enforcement agencies using VHF radio systems and UHF systems (primarily the Department of Public Safety and the Maricopa County Sheriffs Office). Over the next 20 years, this system grew to 15 communications sites covering Interstates I-8 and I-40, Maricopa County and southeast Arizona. While initially envisioned as a law enforcement asset, the Arizona public safety community later identified IARS as a valuable all-hazards resource.

In 2006, because of an increased interest in and need for interoperability and the availability of federal grant funds, the Arizona Division of Emergency Management (ADEM) undertook a modernization project of the IARS network. Besides increasing the radio coverage by installing radios at more communications sites, the 800 MHz band was added at each site to create an AIRS Suite of radios. The VHF system was also converted from simplex operation to a repeater, allowing for communications between users on all three frequency bands (i.e. VHF, UHF, and 800 MHz). This new tri-band system was named the Arizona Interagency Radio System or AIRS.

2.1.2 Operations

The state is broken up into AIRS Regions (see 2.5Appendix A). Although these regions are drawn on the county boundaries, the radio coverage provided by a single communications site may extend beyond a single region/county. Within a region, most communications sites are electronically "voted" to select the site that has the best received audio quality. The "voted" signal is sent to the dispatcher and a control signal is sent to the selected communications site to enable the cross-band/repeater operation. This operation is automatic, does not require any interaction with the dispatcher, and provides repeater and cross-band operation to field users.

2.1.3 Access

Public safety agencies must contact the DPS Wireless Systems Bureau (WSB) Administrative Secretary at 602-223-2247 to request access to AIRS. DPS will provide applicants with the AIRS Memorandum of Understanding (MOU) and an information packet. The applicant agency must sign and return the MOU. DPS will sign the MOU and send an executed copy, along with a Certificate of Participation and user documentation, to the agency. The agency will then be authorized to operate on the state licensed frequencies used by the AIRS system.

All signatory agencies to the AIRS MOU will program AIRS frequencies into their radios in order (AIRS1, followed by AIRS2, AIRS3, AIRS4, AIRS5, and AIRS6). The programming zone may differ depending on the agency or the type of radio.

2.1.4 National Interoperability Channels

While the AIRS MOU applies specifically, and only, to AIRS-suite channels and does NOT include VCALL/VTAC, UCALL/UTAC, or 8TAC channels, agencies are encouraged to program all of the interoperable channels in their radios.

When possible, programming the National Channels in a separate bank from the AIRS Channels is recommended. Since there are not enough slots to combine state and national interoperability channels in the same bank, agencies inconsistently determine which channel to drop. Programming the channels in two different banks allows all channels to be retained and more radio programming to be standardized statewide. It also helps to ensure the availability of channels for the future expansion of AIRS.

While not all radios currently have enough space to have national interoperable channels in a different bank from state channels, this programming convention can be adopted more universally as agencies acquire radios with additional capacity.

2.2 Region Assignments

Because the AIRS system uses a single frequency (per band) to cover the entire state, system originators developed a means of controlling intra-system inference by dividing up primary channel usage among the nine regional areas. Breaking the state into nine regional areas ensures that the amount of intra-system interference can be minimized while still providing good field coverage with a minimum of channel changes (see 2.5Appendix A). Five CTCSS (PL) tones control the nine regions. By reusing the CTCSS tone around the state, Arizona reduces the needed number of channels in the subscriber radios. Consequently, the use of the regional channels AIRS2 through AIRS6 is encouraged, and the use of the statewide channel AIRS1 is discouraged.

2.2.1 VHF Interoperability Channels/Frequencies

The VHF AIRS frequencies are licensed to the State of Arizona and an FCC license is required to operate on those frequencies. The AIRS MOU allows the signatory agencies to operate under the State's mobile license (KA89942). The VHF simplex tactical (TAC) channels are FCC designated national interoperability channels requiring no separate FCC license.

Table 1 Statewide VHF Shared Channels

AZ-SIEC NAME	BAND-WIDTH	TX FREQ MHz	TX CTCSS Hz	RX FREQ MHz	RX CTCSS Hz	NCC[2] NAME	NPSTC[3] NAME
AIRSAZ	25 KHz	155.190	156.7	155.475	CSQ		
AIRS2	25 KHz	155.190	131.8	155.475	CSQ		
AIRS3	25 KHz	155.190	110.9	155.475	CSQ		
AIRS4	25 KHz	155.190	123.0	155.475	CSQ		

[2] NCC refers to the National Coordination Committee common nomenclature recommendations. Public safety professionals responding to Arizona from other areas in the nation might use these channel names.

[3] NPSTC refers to the National Public Safety Telecommunications Council common nomenclature recommendations. Public safety professionals responding to Arizona from other areas in the nation might use these channel names.

AIRS5	25 KHz	155.190	167.9	155.475	CSQ		
AIRS6	25 KHz	155.190	141.3	155.475	CSQ		
VAIRS_D	25 KHz	155.475	156.7	155.475	CSQ	1LAW16	VLAW31
VCALL	12.5KHz	155.7525	156.7	155.7525	CSQ	1CAL18	VCALL10
VTAC1	12.5KHz	151.1375	156.7	151.1375	CSQ	1TAC5	VTAC11
VTAC2	12.5KHz	154.4525	156.7	154.4525	CSQ	1TAC13	VTAC12
VTAC3	12.5KHz	158.7375	156.7	158.7375	CSQ	1TAC22	VTAC13
VTAC4	12.5KHz	159.4725	156.7	159.4725	CSQ	1TAC23	VTAC14

2.2.2 UHF Interoperability Channels/Frequencies

The UHF AIRS frequencies are licensed to the State of Arizona and an FCC license is required to operate on those frequencies. The AIRS MOU allows the signatory agencies to operate under the State's mobile license (KA89942). The UHF simplex TAC channels are FCC designated national interoperability channels requiring no separate FCC license.

Table 2 Statewide UHF Shared Channels

AZ-SIEC NAME	BAND-WIDTH	TX FREQ MHz	TX CTCSS Hz	RX FREQ MHz	RX CTCSS Hz	NCC[4] NAME	NPSTC[5] NAME
AIRSAZ	25 KHz	465.375	100.0	460.375	CSQ		
AIRS2	25 KHz	465.375	131.8	460.375	CSQ		
AIRS3	25 KHz	465.375	110.9	460.375	CSQ		
AIRS4	25 KHz	465.375	123.0	460.375	CSQ		
AIRS5	25 KHz	465.375	167.9	460.375	CSQ		
AIRS6	25 KHz	465.375	141.3	460.375	CSQ		
UAIRS_D	25 KHz	460.375	100.0	460.375	CSQ		
UCALL	12.5KHz	458.2125	156.7	453.2125	CSQ	4CAL27	UCALL40
UCALL_D	12.5KHz	453.2125	156.7	453.2125	CSQ	4CAL27D	UCALL40D
UTAC1	12.5KHz	458.4625	156.7	453.4625	CSQ	4TAC28	UTAC41
UTAC1_D	12.5KHz	453.4625	156.7	453.4625	CSQ	4TAC28D	UTAC41D
UTAC2	12.5KHz	458.7125	156.7	453.7125	CSQ	4TAC29	UTAC42
UTAC_D	12.5KHz	453.7125	156.7	453.7125	CSQ	4TAC29D	UTAC42D
UTAC3	12.5KHz	458.8625	156.7	453.8625	CSQ	4TAC30	UTAC43
UTAC3_D	12.5KHz	453.8625	156.7	453.8625	CSQ	4TAC30D	UTAC43D

2.2.3 800MHz Channels/Frequencies

The 800 MHz channels are all FCC designated national interoperability channels requiring no separate FCC license. AIRSAZ is the national channel with a designated national CTCSS tone and has a number of other recognized channel names (e.g., ICALL, etc.). The TAC1 to TAC4 channels are also national channels. The regional AIRS channels have CTCSS tones only used in Arizona. The 8TAC5 and 8TAC5_D Channels are only recognized in Arizona, but could be used with programming assistance if necessary.

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[4] NCC refers to the National Coordination Committee common nomenclature recommendations. Public safety professionals responding to Arizona from other areas in the nation might use these channel names.

[5] NPSTC refers to that National Public Safety Telecommunications Council common nomenclature recommendations. Public safety professionals responding to Arizona from other areas in the nation might use these channel names.

Table 3 Statewide 800MHz Shared Channels

AZ-SIEC NAME	BAND-WIDTH	TX FREQ MHz	TX CTCSS Hz	RX FREQ MHz	RX CTCSS Hz	ARRC[6] NAME	NCC[7] NAME	NPSTC[8] NAME
AIRSAZ	20KHz	821.0125	156.7	866.0125	CSQ	AIRSAZ	8CAL90	8CALL90
AIRS2	20KHz	821.0125	131.8	866.0125	CSQ			
AIRS3	20KHz	821.0125	110.9	866.0125	CSQ			
AIRS4	20KHz	821.0125	123.0	866.0125	CSQ			
AIRS5	20KHz	821.0125	167.9	866.0125	CSQ			
AIRS6	20KHz	821.0125	141.3	866.0125	CSQ			
8AIRS_D	20KHz	866.0125	156.7	866.0125	CSQ	8AIRS_D	8CAL90D	8CALL90D
8TAC1	20KHz	821.5125	156.7	866.5125	CSQ	8TAC1	8TAC91	8TAC91
8TAC1_D	20KHz	866.5125	156.7	866.5125	CSQ	8TAC1_D	8TAC91D	8TAC91D
8TAC2	20KHz	822.0125	156.7	867.0125	CSQ	8TAC2	8TAC92	8TAC92
8TAC2_D	20KHz	867.0125	156.7	867.0125	CSQ	8TAC2_D	8TAC92D	8TAC92D
8TAC3	20KHz	822.5125	156.7	867.5125	CSQ	8TAC3	8TAC93	8TAC93
8TAC3_D	20KHz	867.5125	156.7	867.5125	CSQ	8TAC3_D	8TAC93D	8TAC93D
8TAC4	20KHz	823.0125	156.7	868.0125	CSQ	8TAC4	8TAC94	8TAC94
8TAC4_D	20KHz	868.0125	156.7	868.0125	CSQ	8TAC4_D	8TAC94D	8TAC94D
8TAC5	20KHz	821.0375	156.7	866.0375	CSQ	8TAC5		
8TAC5_D	20KHz	866.0375	156.7	866.0375	CSQ	8TAC5_D		

2.2.4 Regional AIRS Monitoring Assignments

Regional AIRS monitoring is generally the responsibility of _____. Exceptions are noted in the table below.

Additional details regarding responsibilities of the primary monitoring communication center to be incorporated per recommendations from the SIEC

Table 4 Regional Monitoring Assignments

AIRS Channel	County Serviced	Primary Monitoring Communication Center	Suite Location(s)	Additional Monitoring Information
AIRS2	Pima	Pima County (Partial Coverage)	Mt. Lemmon	
			Keystone Peak	
			Childs Mountain	Not monitored
AIRS2	Coconino	Coconino County	Navajo Mountain	
			Mt. Elden	
			Bill Williams Mountain	

[6] ARRC refers to the 800 MHz National Public Safety Planning Advisory Committee (NPSPAC) Arizona Regional Review Committee common nomenclature recommendations.

[7] NCC refers to the National Coordination Committee common nomenclature recommendations. Public safety professionals responding to Arizona from other areas in the nation might use these channel names.

[8] NPSTC refers to the National Public Safety Telecommunications Council common nomenclature recommendations. Public safety professionals responding to Arizona from other areas in the nation might use these channel names.

AIRS Channel	County Serviced	Primary Monitoring Communication Center	Suite Location(s)	Additional Monitoring Information
			Schnebly Hill	
			Jacob Lake (pending)	
AIRS3	Santa Cruz	Not Monitored	Nogales Hill	Not monitored
AIRS3	Gila Pinal	Pinal County Casa Grande PD (Partial Coverage)	Signal Peak	
			Mt Ord	Not monitored
AIRS3	La Paz	La Paz County	Cunningham Peak (pending)	
AIRS3	Yuma	Yuma County (Partial Coverage)	Telegraph Pass	
			Oatman Mountain	Not monitored
AIRS4	Navajo Apache	Navajo County	Piney Hill	
			Roberts Ranch	
			Greens Peak	
			Antelope Mesa	
			Holbrook	
			Brookbank Point	
AIRS4	Mohave	Mohave County and Havasu PD	Willow Beach	Mohave County
			Christmas Tree Pass	Mohave County
			Hualapai Mountain	Mohave County
			Black Rock (pending)	Mohave County
			Lake Havasu	Havasu PD
AIRS5	Greenlee Graham Cochise	DPS Tucson	Heliograph Pass	
			Mule Mountain	
			Bernardino Peak	
			Guthrie Peak	
AIRS5	Yavapai	Sedona	Juniper Mountain	
			Mingus Mountain	
			Squaw Peak	
AIRS6	Maricopa	Maricopa County	Towers Mountain	
			Thompson Peak	
			South Mountain	
			Whitetank Mountain (pending replacement)	

2.3 Operational Guidelines

2.3.1 Rules of Use

AIRS channels are reserved for situations that require interoperable communications to coordinate multiple public safety entities and/or activities across two or more separate radio systems. The following rules of use shall apply to these channels:

- **National Incident Management System** – Use an Incident Command System (ICS) compliant with the National Incident Management System (NIMS) when using a regional interoperability resource such as AIRS.
- **Plain Language** – All interoperable communications during multi-agency, multi-discipline incidents will be in plain language. Avoid using radio codes, acronyms, and

abbreviations as they may cause confusion between agencies. Ensure that all verbal requests for assistance or backup specify the reason for the request.

- **Unit Identification** – Announce your home agency prior to announcing your unit identifier during interoperable communication situations (i.e., Flagstaff Engine 1).

2.3.2 Prioritization

In response to events or incidents which cross over political jurisdictions, there will potentially be competing demands and priorities for interoperable communications assets.

Until such time as Incident Command is established, the lead agency designee (i.e., communications supervisor/command personnel), in cooperation with their counterparts in other assisting agencies, will have the authority to designate the use of interoperable assets, including AIRS channels. Once Incident Command has been established, Command Staff or Communication Unit Leaders (when designated) direct the further coordination and delegation of the interoperable communications assets assigned to the event or incident in question.

Agencies should judiciously activate needed interoperable assets so as to both effectively respond to the event and/or incident and also minimize any negative impact on surrounding agencies or jurisdictions.

When the same resources are requested for two or more incidents, AIRS assignments should be based on the priority levels listed below:

1. Disasters, large scale incidents, or extreme emergencies requiring mutual aid or interagency communications.
2. Incidents where imminent danger exists to life or property.
3. Other incidents requiring the response of multiple agencies.
4. Pre-planned events requiring mutual aid or interagency communications.
5. Incidents involving a single agency where supplemental communications are needed for short term agency use.
6. Drills, tests and exercises.

In the event of multiple simultaneous incidents within the same priority level, AIRS channels should be allocated with the following priorities in mind:

1. Incidents with the greatest level of exigency (e.g., greater threat to life or property, more immediate need, etc.) have priority over less exigent incidents.
2. Agencies with single/limited interoperable options have priority use of those options over agencies with multiple interoperable options.
3. When at all possible, agencies already using an interoperable asset during an event should not be redirected to another resource.

2.3.3 Restrictions and Limitations

The AIRS Suite is limited to one state wide frequency pair per band.

Known restriction and limitation issues include:

- **Coverage**. See the County Maps in Appendix A to help determine availability of coverage and gaps in coverage. The County Maps show composite radio coverage aggregated from individual single site coverage estimates. The AIRS Regional Channel Assignment Map is made with the radio sites for the region as the top layers. There may be additional coverage from an adjacent region that is identified on the County Map of the adjacent region.
- **Non-voted tower assignments**. There are some AIRS towers not voted back to a communications center
- **Encryption**. AIRS channels are NOT encrypted.
- **Monitoring**. Several locations exist statewide where users have AIRS coverage but are not near enough to any communication center to allow for AIRS monitoring. (See 2.2.4 Table 4 Regional Monitoring Assignments documenting several of these locations.)
- **Communication.** The AIRS system makes use of conventional repeaters. Therefore, primary monitoring communication centers can communicate with users throughout the regional coverage area. However, direct user to user communication is possible only between users having coverage from a common tower within the region.

2.3.4 Monitoring and Dispatch Actions

The communication centers identified in Section 2.2.4, Table 4 Regional Monitoring Assignments are responsible for monitoring the regionally assigned AIRS channel 24/7. DPS will monitor AIRS in areas where communication centers cannot monitor. The volume for AIRS must be set to a level allowing dispatchers to immediately hear and respond to any message traffic across that channel at all times. Note that car-to-car or "direct" AIRS usage will not be monitored by any dispatch center.

1. Multi-agency Incidents
    a. Agencies leading multi-agency incidents where AIRS channels will be used will notify the primary monitoring communication center of their need for the channel and their readiness to assume responsibility for the incident traffic.
    b. If the channel is available, the primary monitoring communication center will confirm availability and surrender the incident to the lead agency's communication center. The lead agency's communication center will notify additional agencies of the AIRS incident, as appropriate.
    c. If the channel is not available, the primary monitoring communication center will advise the agency leading the incident that the channel is in use and provide the lead agencies for the simultaneous events with any available information needed to properly prioritize the use of AIRS and other interoperable communication assets for the simultaneous events. Dispatch personnel may suggest a different AIRS channel at their discretion based on their knowledge of other in-progress incidents utilizing AIRS, other available resources, etc.
    d. During an incident, communication centers and agencies will document radio traffic on AIRS in a manner consistent with their daily practices for incidents within their agency. For example, dispatch will initiate a CAD record for

incidents reported on AIRS if creating such a record is consistent with their daily operations protocols.

e. At the termination of an incident, or when the incident no longer requires the use of AIRS, communication center personnel with responsibility for the incident traffic will announce that the channel is clear and document the time in their incident records.

f. In all cases, the primary monitoring communication center will continue to monitor AIRS traffic in the event of a change in the incident(s) or the development of a subsequent incident.

2. Itinerate Use

a. Responders working outside of their agency's coverage area may use AIRS channels to request assistance from the primary monitoring agency for the region where they need assistance.

b. The primary monitoring agency will assist the requester by contacting an appropriate local agency to respond and will maintain communication with the requester as needed until communications are moved to another asset.

c. The primary monitoring agency may facilitate notification to the responder's agency of the responder's situation if requested to do so.

d. The communication centers and agencies involved will document itinerate use of AIRS in a manner consistent with their daily practices for incidents within their agency.

2.3.5 Field User Actions

1. Initiate command protocols according to the Incident Command System (ICS) for all incidents or events requiring the response of multiple agencies.
2. Once established, maintain communications between Command personnel and the monitoring dispatch agency on the assigned AIRS channel until the incident/event is terminated or communications are moved to another asset.
3. Do not use AIRS as a travel channel for traffic unrelated to an incident.
4. Report any problems with AIRS to agency/communication center personnel who will initiate the AIRS problem identification and resolution process.

2.4 Problem ID and Resolution

Technical and maintenance problems with AIRS are resolved by DPS. The SIEC, with the support of the PSIC Office, recommends solutions for oversight issues and any unresolved technical and maintenance issues.

2.4.1 During an incident:

1. Report any technical and maintenance problems with AIRS to the primary agency dispatcher or to the COML, if designated. Dispatch personnel for the agency initiating the

call for service, incident command staff, and/or the incident COML will report those problems with AIRS to DPS by contacting the WSB Network Operations Center (NOC). The WSB NOC will be responsible for ensuring effective resolution of all reported problems.

2. The DPS WSB NOC can be contacted by calling 602-223-2245. During duty hours, an on duty technician will take the trouble report. After normal hours, the On-Call Supervisor will be notified.
3. Move the incident off of AIRS channels if the issue cannot be resolved satisfactorily.

2.4.2 Non-emergency and after incident issues:

1. Dispatch personnel for the agency initiating the call for service, incident command staff, and/or the incident COML can report any technical and maintenance problems with AIRS to the DPS WSB NOC. The AIRS NOC will be responsible for ensuring an effective resolution to all reported problems.
2. The DPS WSB NOC can be reached via email at WSB_NOC@AZDPS.GOV. Include as much information about the nature of the problem as possible, such as the number of users, what location(s), which frequency (band), and any other defining characteristics.

2.4.3 Oversight issues and unresolved AIRS problems:

1. Report oversight issues and unresolved AIRS problems to the SIEC via the PSIC Office. The SIEC will discuss reported AIRS issues/problems and recommend an action plan.
2. Reports may be submitted electronically to siec@azgita.gov or in writing to the PSIC Office, Government Information Technology Agency located at 100 N 15th Avenue, Suite 440, Phoenix, AZ 85007. The PSIC Office will, in turn, agendize the oversight issue or unresolved problem report for the SIEC.

2.5 AIRS Testing Protocols

Each communication center responsible for primary AIRS monitoring duties should host regular open-net tests of the AIRS system.

1. Each center's test will be set and announced in advance at the discretion of the center.
2. At the onset of the test, dispatch personnel will announce the start of the test, ensure that the channel is not otherwise in use, and execute a roll-call of public safety and service agencies within the monitored area that have agreed to take part in the test.
3. Additional agencies not included in the roll-call should be given an opportunity to announce themselves at the end of the roll-call. The communication center can then terminate the test.
4. The communication center will document the test as required by its own policies and procedures.
5. If AIRS problems are identified during the open-net test, the center will follow the Section 2.4 Problem ID and Resolution procedures to initiate the resolution process for those problems.

Appendix A AIRS Regional Channel Assignments & Coverage Maps

A.1 AIRS Regional Channel Assignments

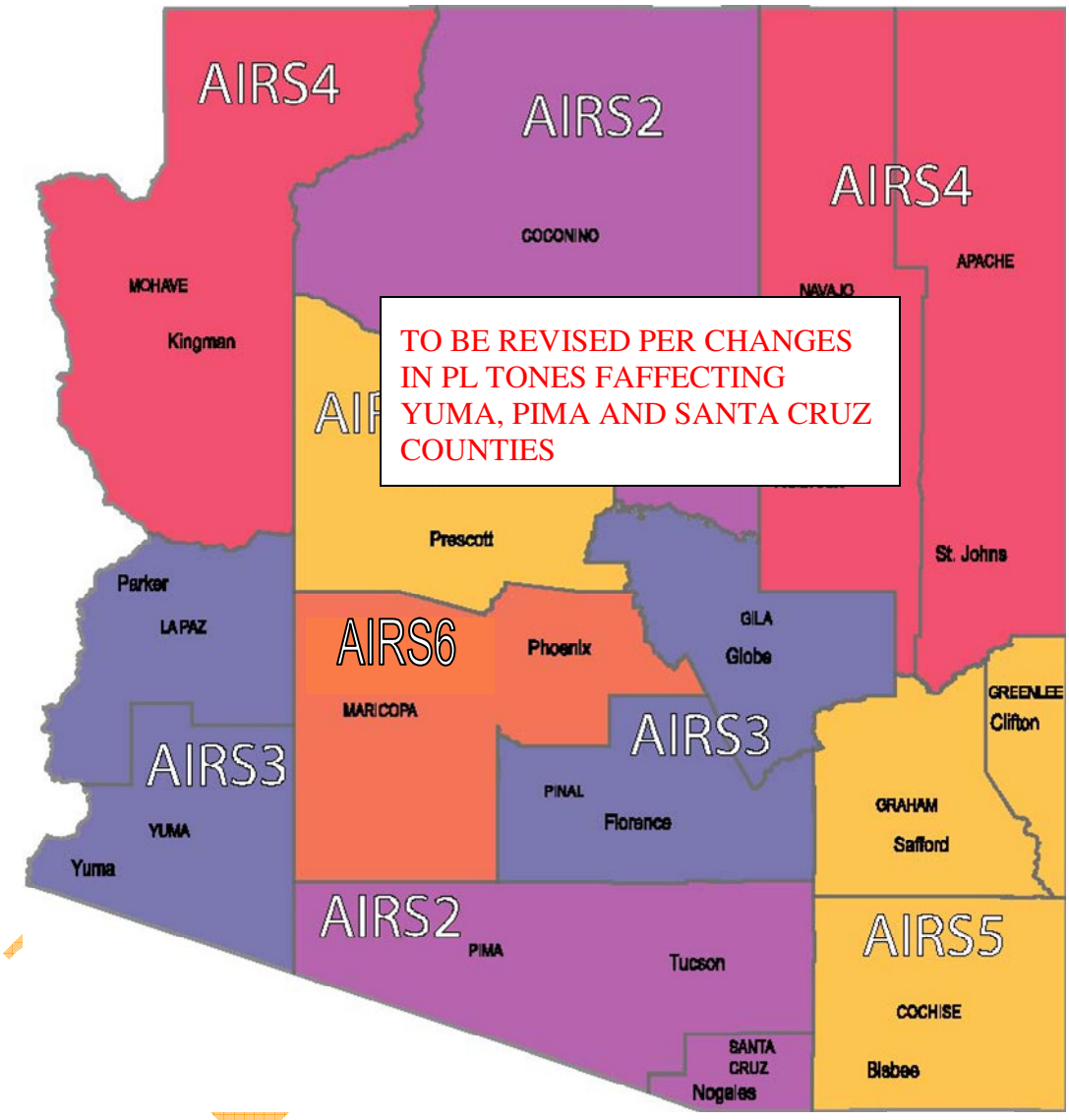


Figure 1: Regional AIRS Channel Assignments

AIRS2 – 131.8 HZ
AIRS3 – 110.9 HZ
AIRS4 – 123.0 HZ
AIRS5 – 167.9 HZ
AIRS6 – 141.3 HZ

A.2 Mohave County Coverage – AIRS4

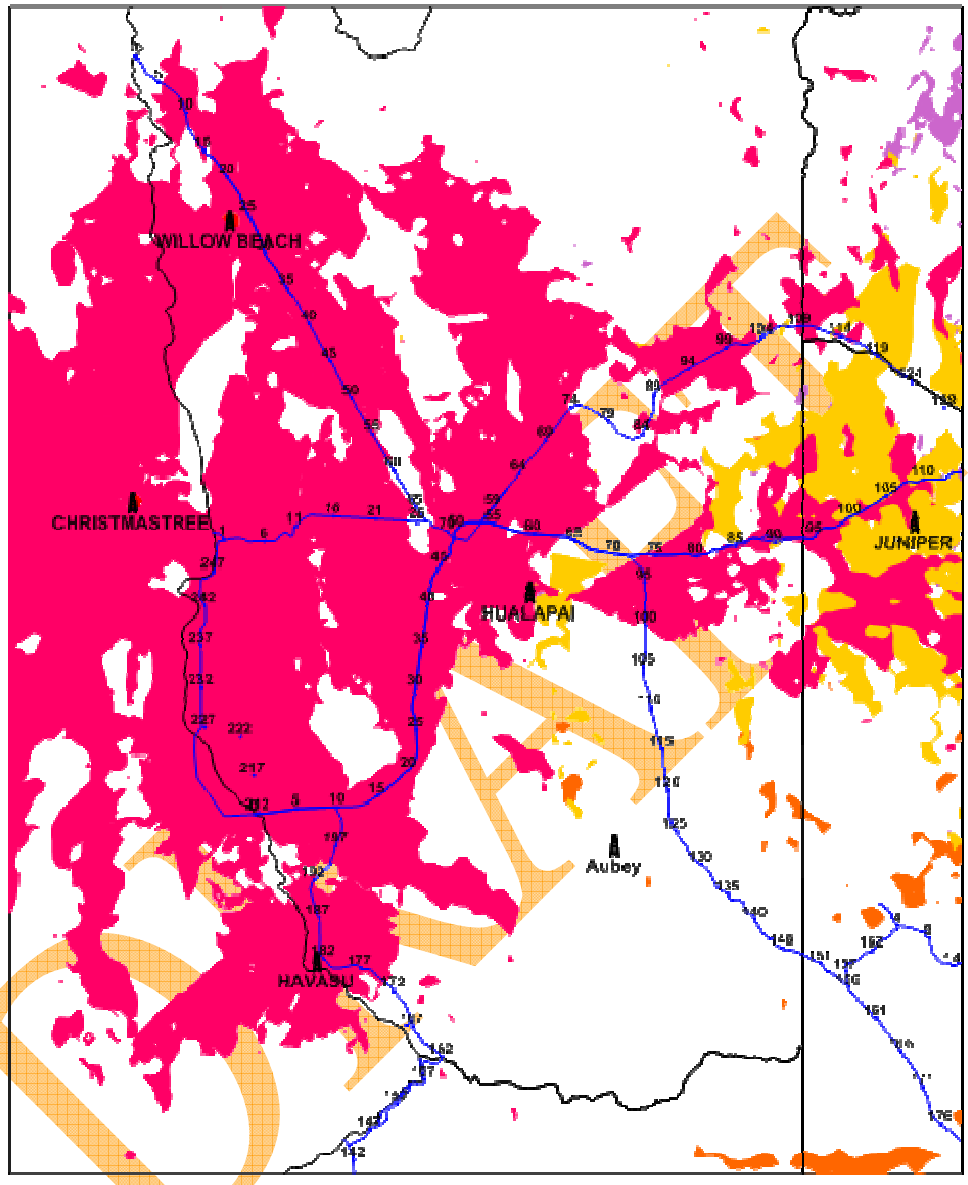


Figure 2: Mohave Predicted AIRS Regional Radio Coverage for a UHF Mobile

VHF & 800 MHz Coverage May Differ

AIRS2 – 131.8 HZ
AIRS3 – 110.9 HZ
AIRS4 – 123.0 HZ
AIRS5 – 167.9 HZ
AIRS6 – 141.3 HZ

A.3 Coconino County Coverage – AIRS2

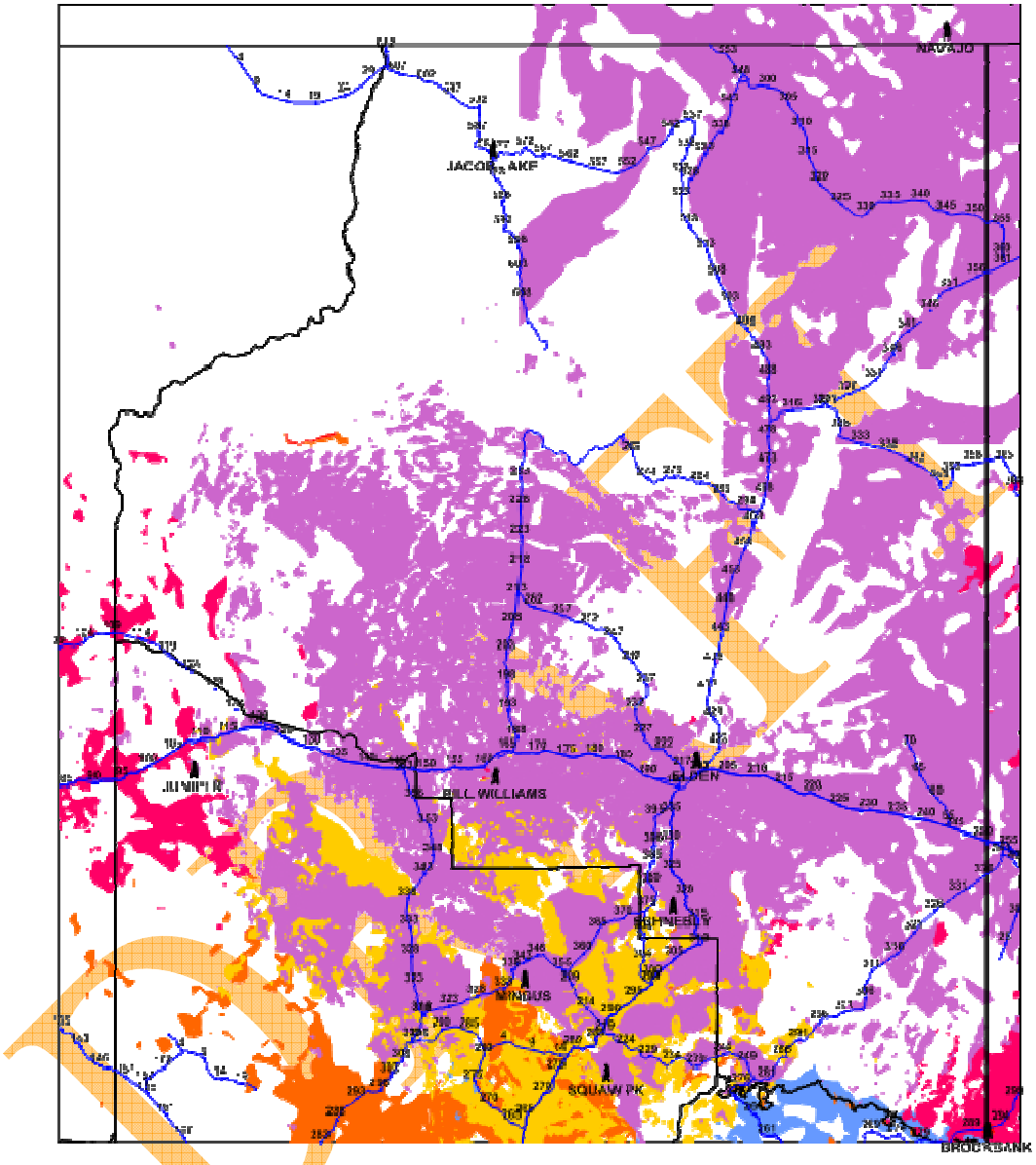


Figure 3: Coconino Predicted AIRS Regional Radio Coverage for a UHF Mobile

VHF & 800 MHz Coverage May Differ

AIRS2 – 131.8 HZ
AIRS3 – 110.9 HZ
AIRS4 – 123.0 HZ
AIRS5 – 167.9 HZ
AIRS6 – 141.3 HZ

A.4 Apache and Navajo Counties Coverage – AIRS4

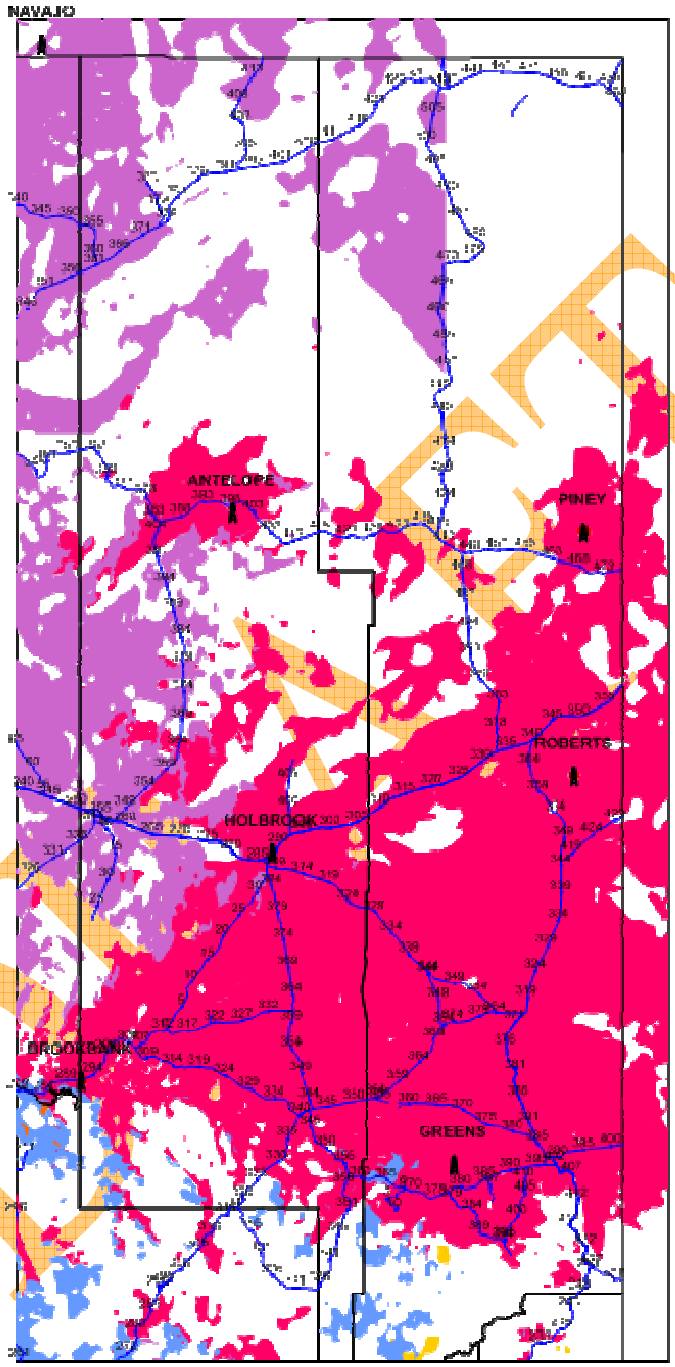


Figure 4: Apache and Navajo Predicted AIRS Regional Radio Coverage for a UHF Mobile

VHF & 800 MHz Coverage May Differ

AIRS2 – 131.8 HZ
AIRS3 – 110.9 HZ
AIRS4 – 123.0 HZ
AIRS5 – 167.9 HZ
AIRS6 – 141.3 HZ

A.5 Yavapai County Coverage – AIRS5

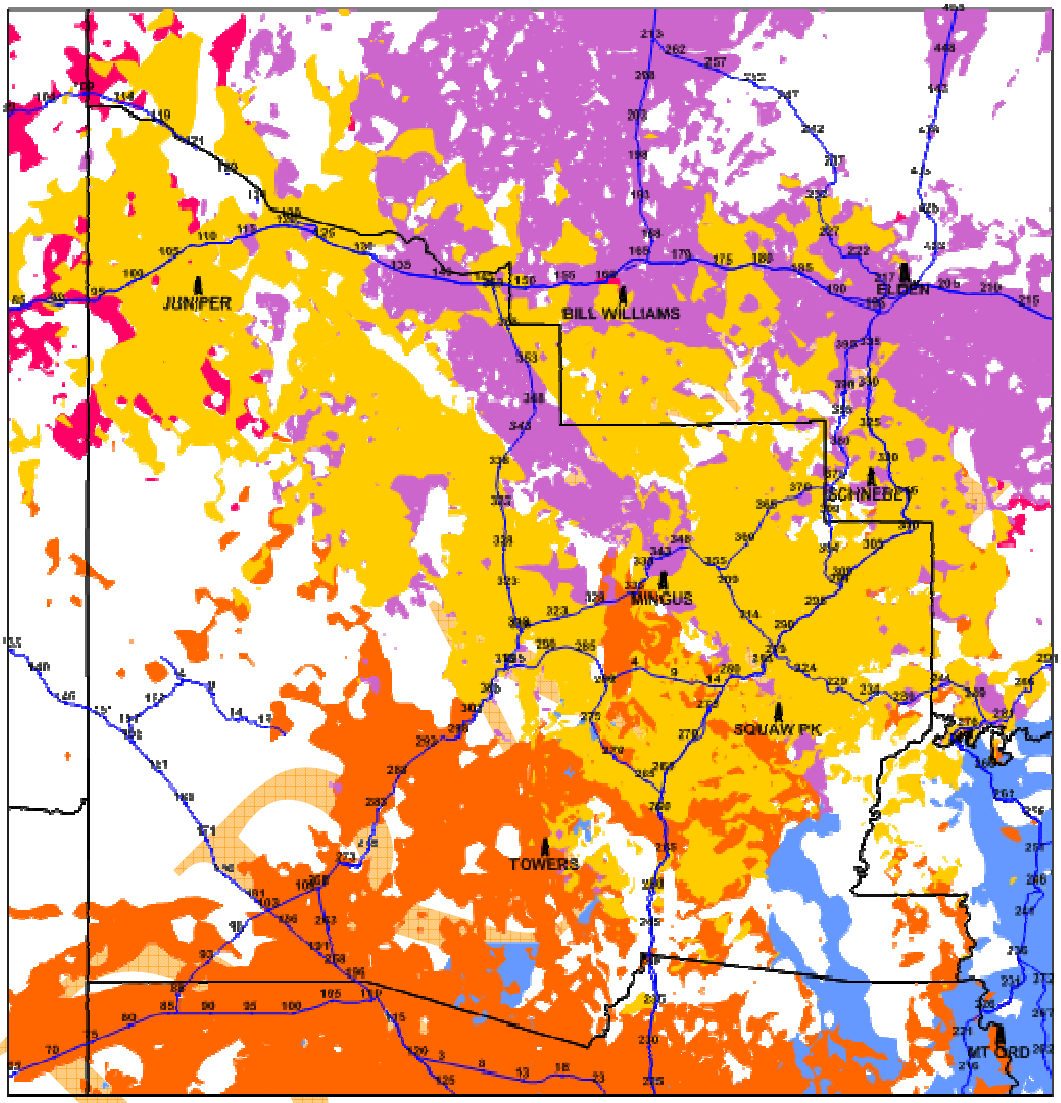


Figure 5: Yavapai Predicted AIRS Regional Radio Coverage for a UHF Mobile

VHF & 800 MHz Coverage May Differ

AIRS2 – 131.8 HZ
AIRS3 – 110.9 HZ
AIRS4 – 123.0 HZ
AIRS5 – 167.9 HZ
AIRS6 – 141.3 HZ

A.6 Maricopa County Coverage – AIRS6

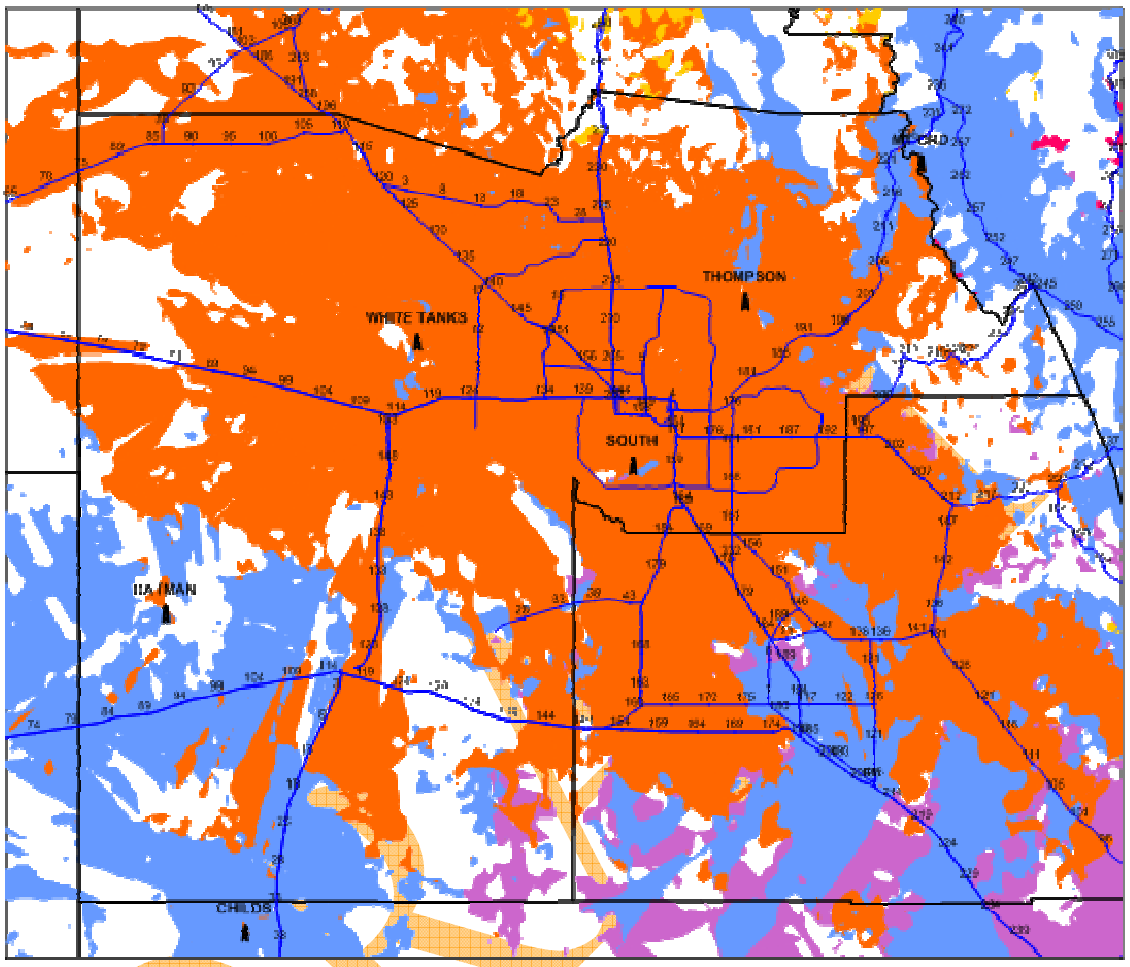


Figure 6: Maricopa Predicted AIRS Regional Radio Coverage for a UHF Mobile

VHF & 800 MHz Coverage May Differ

AIRS2 – 131.8 HZ
AIRS3 – 110.9 HZ
AIRS4 – 123.0 HZ
AIRS5 – 167.9 HZ
AIRS6 – 141.3 HZ

A.7 Gila and Pinal Counties Coverage – AIRS3

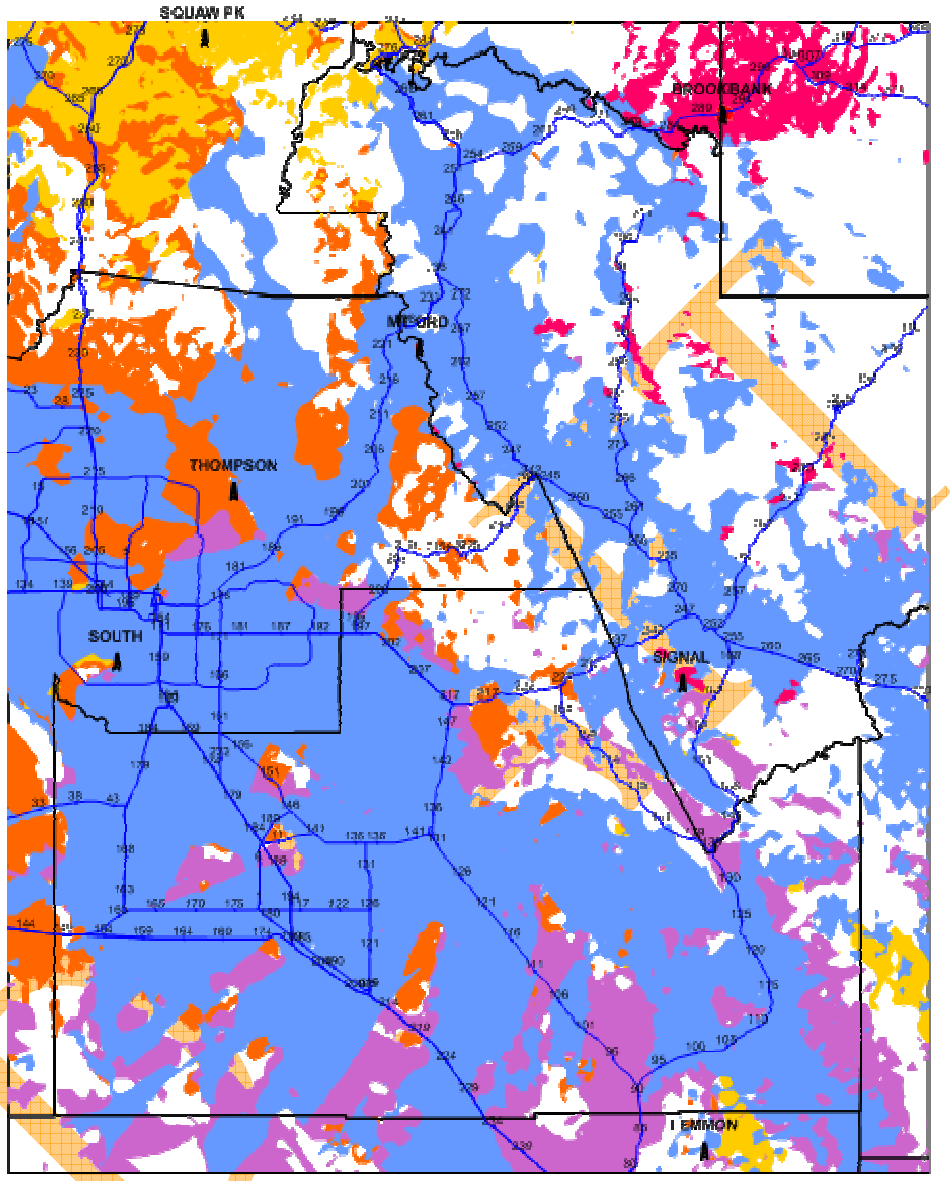


Figure 7: Gila and Pinal Predicted AIRS Regional Radio Coverage for a UHF Mobile

VHF & 800 MHz Coverage May Differ

AIRS2 – 131.8 HZ
AIRS3 – 110.9 HZ
AIRS4 – 123.0 HZ
AIRS5 – 167.9 HZ
AIRS6 – 141.3 HZ

A.8 Pima and Santa Cruz Counties Coverage – AIRS2

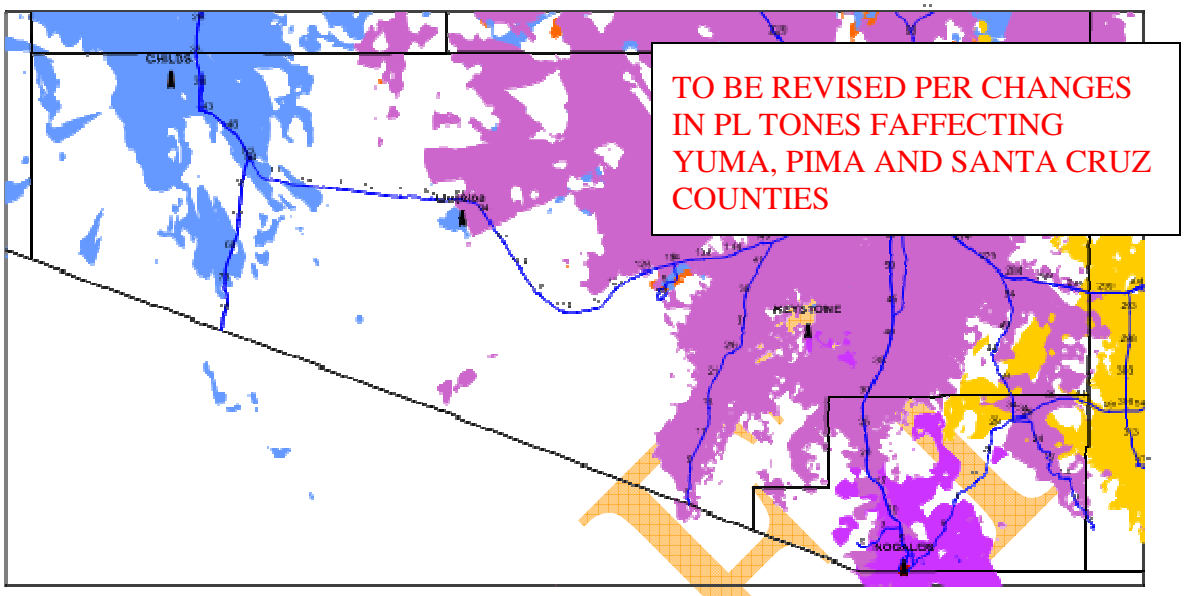


Figure 8: Pima and Santa Cruz Predicted AIRS Regional Radio Coverage for a UHF Mobile

VHF & 800 MHz Cover May Differ

AIRS2 – 131.8 HZ
AIRS3 – 110.9 HZ
AIRS4 – 123.0 HZ
AIRS5 – 167.9 HZ
AIRS6 – 141.3 HZ

A.9 La Paz and Yuma Counties Coverage – AIRS3

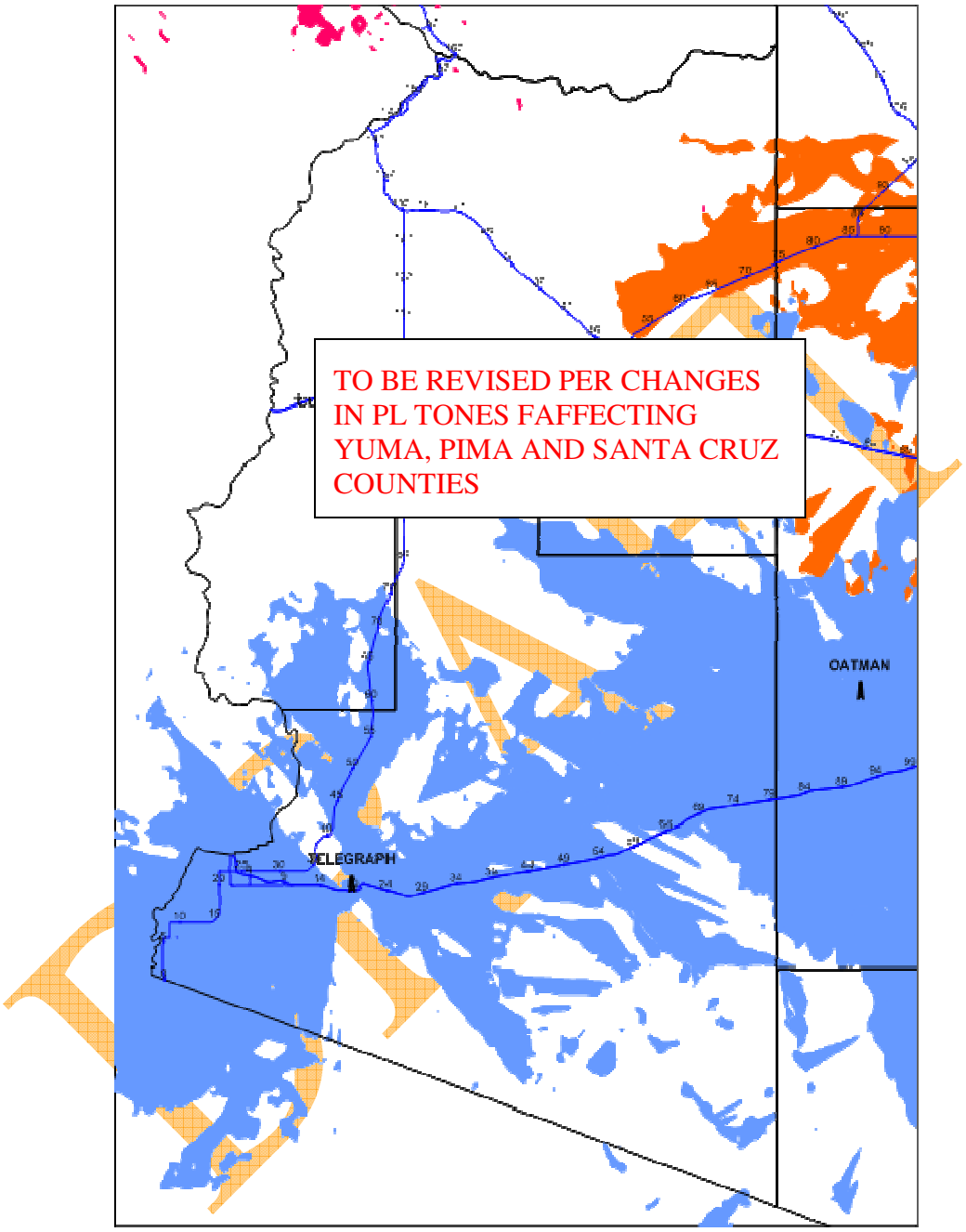


Figure 9: La Paz and Yuma Predicted AIRS Regional Radio Coverage for a UHF Mobile

VHF & 800 MHz Coverage May Differ

AIRS2 – 131.8 HZ
AIRS3 – 110.9 HZ
AIRS4 – 123.0 HZ
AIRS5 – 167.9 HZ
AIRS6 – 141.3 HZ

A.10 Cochise, Graham, & Greenlee Counties Coverage – AIRS5

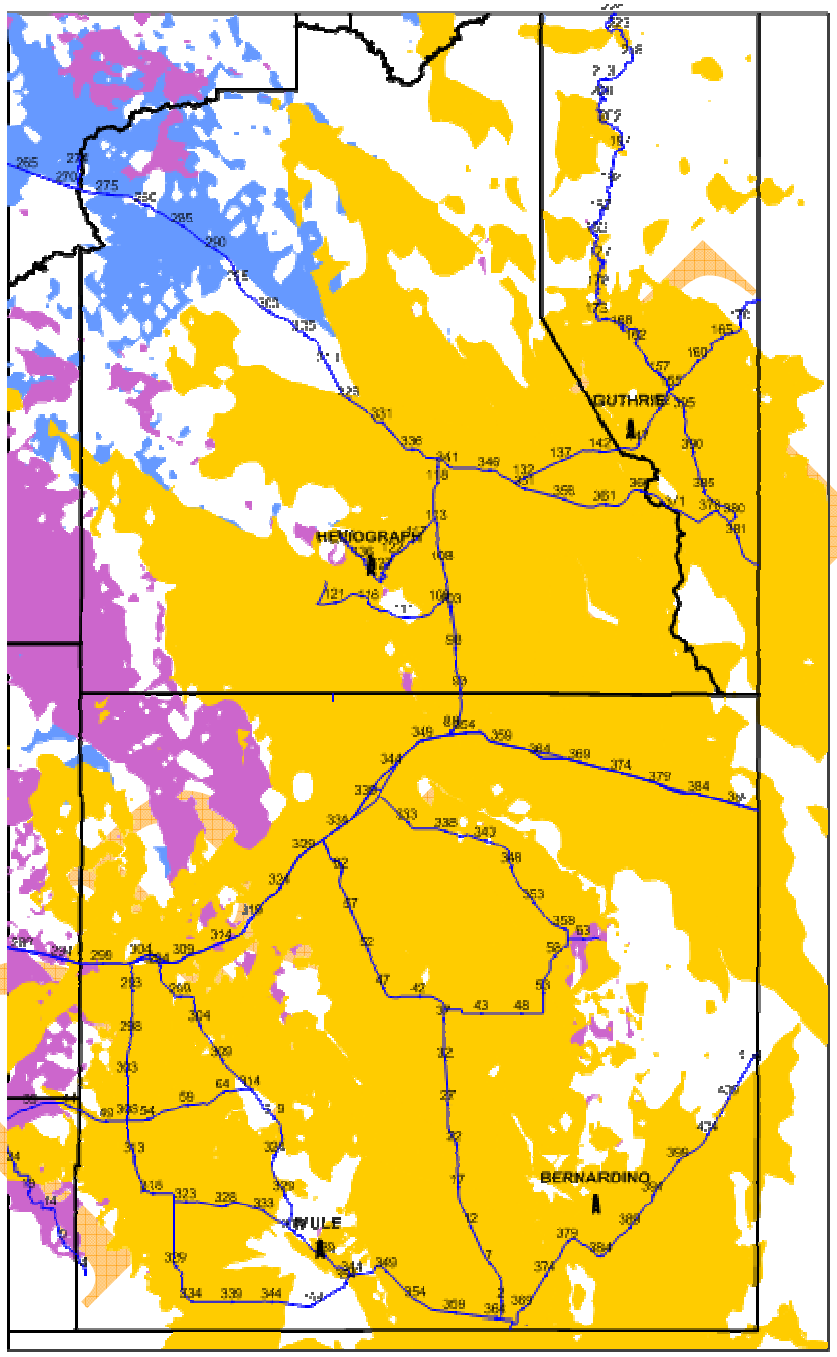


Figure 10: Cochise, Graham & Greenlee Predicted AIRS Regional Radio Coverage for UHF Mobile

VHF & 800 MHz Coverage May Differ

AIRS2 – 131.8 HZ
AIRS3 – 110.9 HZ
AIRS4 – 123.0 HZ
AIRS5 – 167.9 HZ
AIRS6 – 141.3 HZ

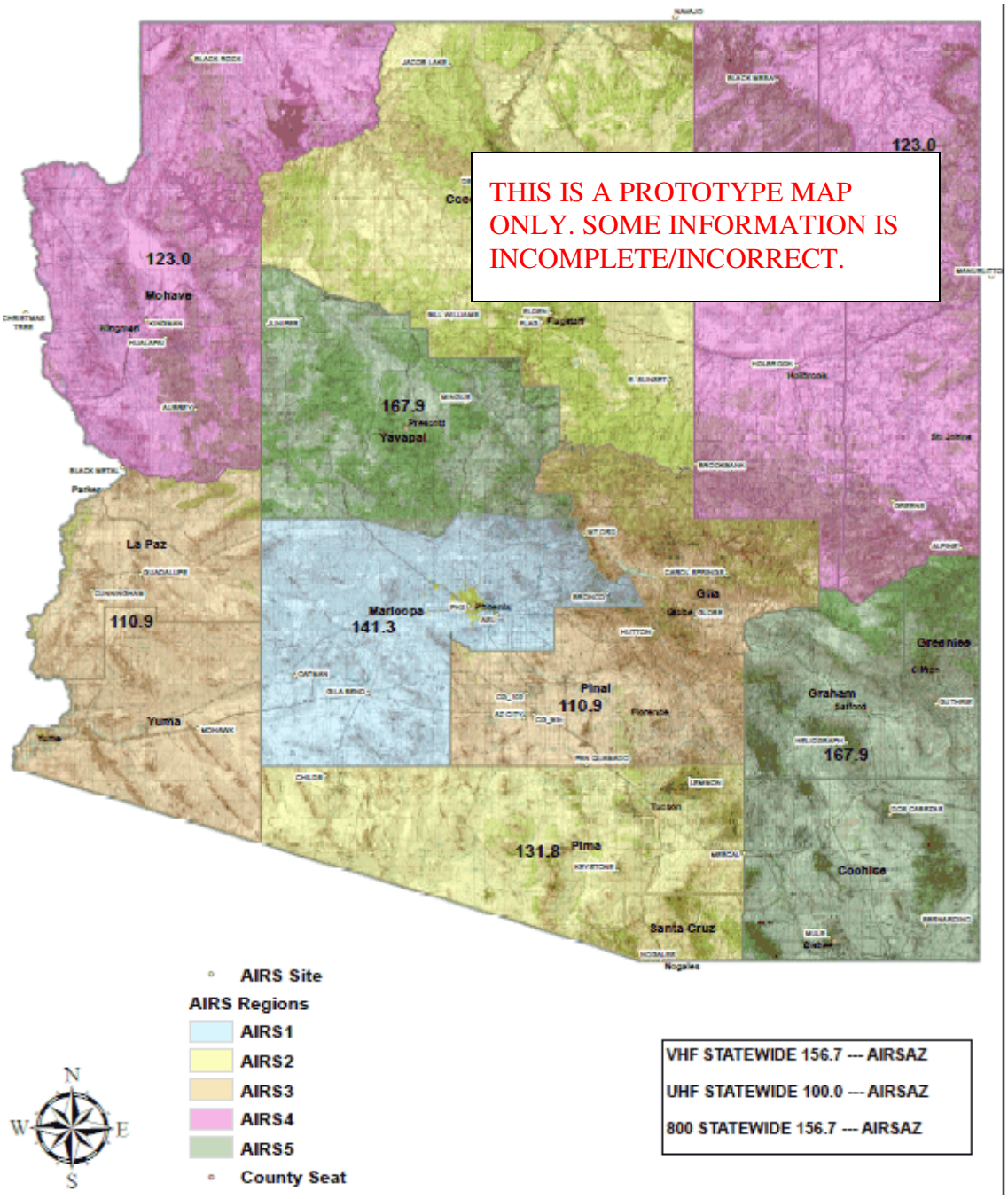
Appendix B AIRS Tower Locations and Assigned PL Tones

B.1 AIRS Suite Locations

AIRS Channel	County Serviced	Suite Location(s)	PL Tones
AIRS2	Pima	Mt. Lemmon Keystone Peak Childs Mountain	
AIRS2	Coconino	Navajo Mountain Mt. Elden Bill Williams Mount Schnebly Hill Jacob Lake (pendi	
AIRS3	Santa Cruz	Nogales Hill	
AIRS3	Gila Pinal	Signal Peak Mt. Ord	
AIRS3	La Paz	Cunningham Peak (pending)	
AIRS3	Yuma	Telegraph Pass Oatman Mountain	
AIRS4	Navajo Apache	Piney Hill Roberts Ranch Greens Peak Antelope Mesa Holbrook Brookbank Point	
AIRS4	Mohave	Willow Beach Christmas Tree Pass Hualapai Mountain Black Rock (pending) Lake Havasu	
AIRS5	Greenlee Graham Cochise	Heliograph Pass Mule Mountain Bernardino Peak Guthrie Peak	
AIRS5	Yavapai	Juniper Mountain Mingus Mountain Squaw Peak	
AIRS6	Maricopa	Towers Mountain Thompson Peak South Mountain Whitetank Mountain (pending replacement)	

AWAITING FINAL PL TONE CONFIRMATION FOR EACH TOWER.

B.2 AIRS Suite Location Map



Appendix C VTAC Regional Channel Map

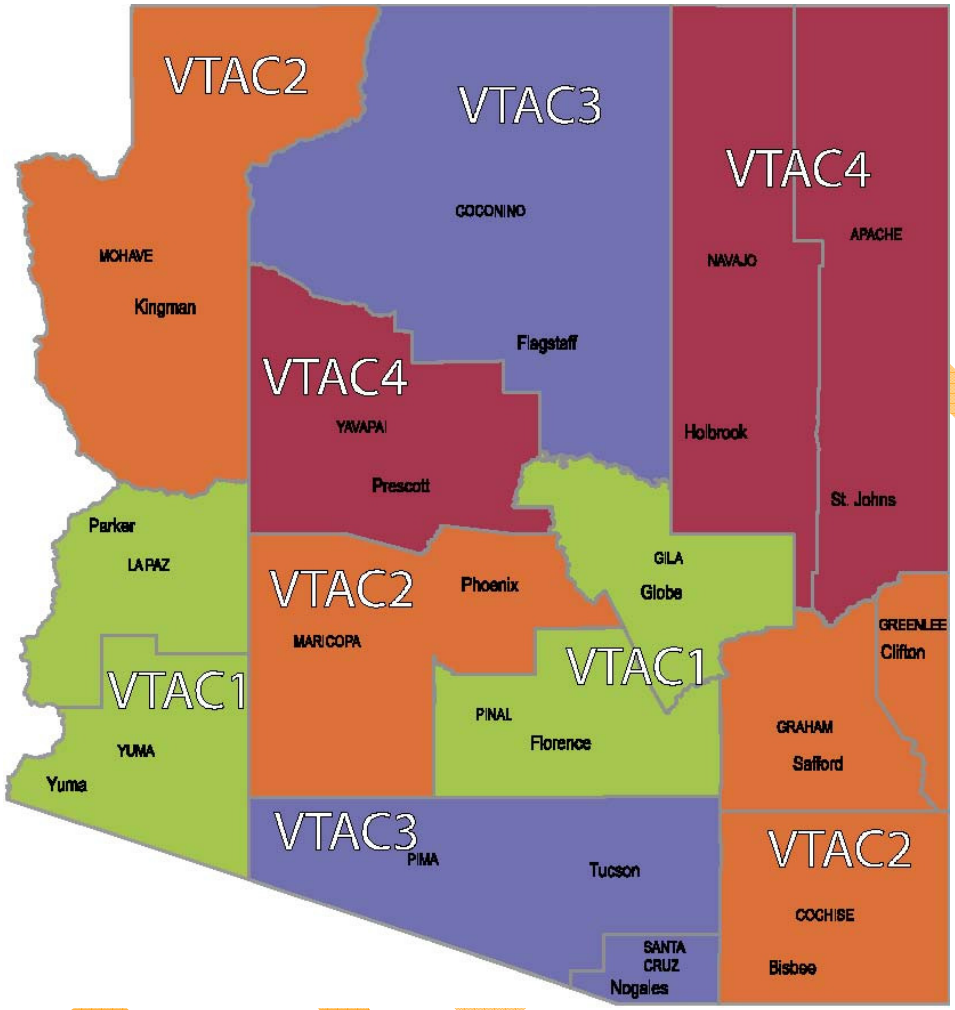


Figure 11: Regional VHF Tactical Channel Assignments

Glossary

AIRS	Arizona Interagency Radio System, formerly referred to as the Interagency Radio System (IARS) or as the Arizona Emergency Radio System (AERS)
AIRSAZ	Arizona Interagency Radio System Arizona
ARRC	The 800 MHz National Public Safety Planning Advisory Committee (NPSPAC) Arizona Regional Review Committee
CAD	Computer Aided Dispatch
COML	Communications Unit Leader
CTCSS	Continuous Tone-coded Squelch System, also known as "PL", a sub-audible tone used in radio systems to control radio access
DPS	Department of Public Safety
EMS	Emergency Medical Services
FCC	Federal Communications Commission
Freq	Frequency
IC	Incident Command
ICS	Incident Command System
ID	Identification
MOU	Memorandum of Understanding
NCC	National Coordination Committee
NGO	Non-governmental Organization
NIMS	National Incident Management System
NOC	Arizona Department of Public Safety, Wireless Systems Bureau, Network Operations Center
NPSTC	National Public Safety Telecommunications Council
PL	Private Line
POC	Point of Contact
PSAP	Public Safety Answering Point
PSCC	The Public Safety Communications Advisory Commission provides recommendations to the PSIC Office on the development of standards based systems that provide interoperability for public safety agencies' communications statewide
PSIC Office	Public Safety Interoperable Communications Office in the Arizona Government Information Technology Agency. The PSIC Office is responsible for advancing interoperable communication in Arizona and supports the PSCC and the SIEC in the performance of their missions
SIEC	The Statewide Interoperability Executive Committee is the sub-committee of the PSCC responsible for technical and operational recommendations to the PSCC. The SIEC manages the 700 MHz, UHF and VHF spectrums, and has oversight of AIRS
SOP	Standard Operating Procedure
Voter	A device that selects the best quality audio from a number of received signals and routes the selected "voted" audio to a dispatcher
WSB	Arizona Department of Public Safety, Wireless Systems Bureau The WSB has engineering and maintenance responsibility for AIRS.